Graphing: Position v. Time Worksheet

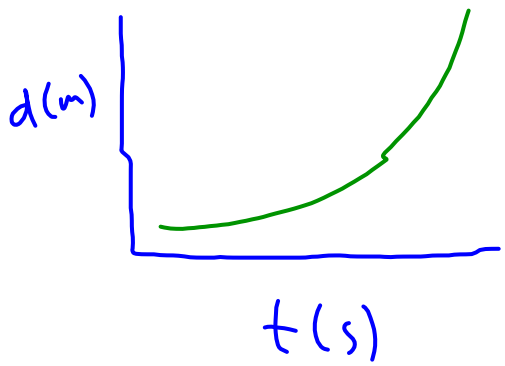
- The graph for questions 1-3 is a DISPLACEMENT graph. We know this because there are negative slopes.

#3 $\bar{v} = \frac{\bar{d}}{t} = \frac{\bar{d}_f - \bar{d}_i}{t_f - t_i}$

f = final

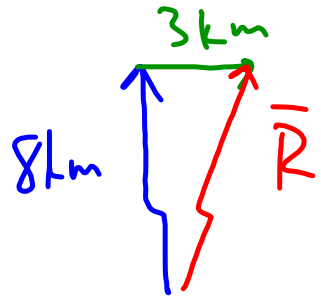
i = initial

- When there is a straight line on a displacement v. time graph, the object is moving at a constant velocity
- If there is a curve, this means that the object has a changing velocity.



Scalars and Vectors: Intro and Practice

1

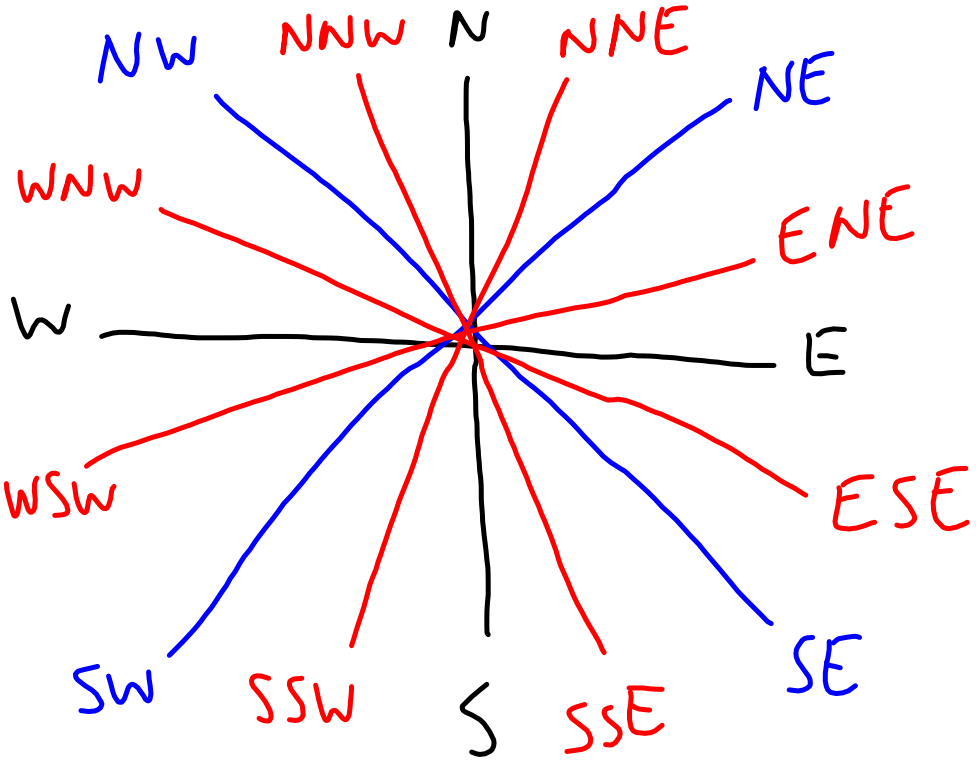


$$R = \sqrt{(8\,km)^2 + (3\,km)^2}$$

$$= \sqrt{73}\ km$$

leave for now, use calculator otherwise

$\bar{R} = \sqrt{73}$ km north-east


NW
NNW
N
NNE
NE
WNW
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W
E
WSW
ESE
SW
SSW
S
SSE
SE

Acceleration

- Change in velocity
  - Change in magnitude of velocity
  - Change in direction of velocity
- Acceleration can:
  - Increase
  - Decrease
  - Be equal to $\emptyset$ (constant velocity in one direction)
- Equation

$$\bar{a} = \frac{\bar{v}}{t} = \frac{\bar{v}_f - \bar{v}_i}{t_f - t_i}$$

Units: m/s^2 $\left[\frac{\text{displacement}}{(\text{time})^2}\right]$

- Changes in velocity, which is acceleration:
  - Small magnitude → velocity is changing gradually
  - Large magnitude → velocity is changing rapidly
  - Positive acceleration → velocity is increasing in a positive direction
  - Negative acceleration → velocity is decreasing relative to the positive direction

deceleration